divisions in the ascus follow the same routine as described by Miss FRASER in *Humaria rutilans*. The first mitosis is heterotypic, the second homotypic, and the third brachymeiotic, leading to a reduction without division in the last mitosis. The spores are formed by the astral rays in the manner described by HARPER for *Pyronema*.—H. HASSELBRING.

A parasitic orchid.—According to the investigation of KUSANO,[46] the vegetative body of the orchid *Castrodia elata* consists of a tuberous rhizome which multiplies through the production of tuberous offshoots. If these offshoots form no mycorhiza, they decrease in size and finally die without being able to flower, but if infected by the mycelium of *Armillaria mellea* they enlarge, flower, and produce daughter tubercles; it is therefore concluded that the orchid is completely parasitic upon the fungus. The mycorhiza is of the ectotropic type; occasionally, however, the fungus behaves as a parasite, penetrating deeply into the tissue of the tubers and causing their collapse in a manner similar to that seen in potato tubers attacked by the same organism.—GEO. D. FULLER.

Budding in Cycas.—While in Japan, Miss STOPES[47] noted the origin of the well known adventitious buds of *Cycas revoluta*. They arise on the upper portions of old leaf bases, some appearing more than 200 crowns back of the growing point. None were found arising from the axis, and the young buds do not seem to have any connection with the axis. The buds when removed grow into normal plants, but when they develop strongly upon the parent plant they give rise to the so-called "branching," and in such cases, of course, vascular connections are established with the main axis.—CHARLES J. CHAMBERLAIN.

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[46] KUSANO, S., Preliminary note on *Gastrodia elata* and its mycorhiza. Ann. Botany **25**:521–523. 1911.

[47] STOPES, MARIE C., Adventitious budding and branching in *Cycas revoluta*. New Phytol. **9**:234–241. *figs.* 7. 1910.